**4. Write a Python program for the polyalphabetic substitution cypher**

**uses a separate monoalphabetic substitution cypher for each**

**successive letter of plaintext, depending on a key**

**CODE:**

**def poly\_sub\_cipher(plaintext, key):**

**"""**

**Encrypts plaintext using a polyalphabetic substitution cipher with a key.**

**:param plaintext: The plaintext to be encrypted.**

**:type plaintext: str**

**:param key: The key to be used for the cipher.**

**:type key: str**

**:return: The encrypted ciphertext.**

**:rtype: str**

**"""**

**ciphertext = ""**

**key\_len = len(key)**

**for i in range(len(plaintext)):**

**char = plaintext[i]**

**key\_char = key[i % key\_len]**

**shift = ord(key\_char) - ord('a')**

**if char.isalpha():**

**if char.isupper():**

**shifted\_char = chr((ord(char) - ord('A') + shift) % 26 + ord('A'))**

**else:**

**shifted\_char = chr((ord(char) - ord('a') + shift) % 26 + ord('a'))**

**ciphertext += shifted\_char**

**else:**

**ciphertext += char**

**return ciphertext**

**plaintext =input("enter the plaintext=")**

**key =input("enter the key=")**

**ciphertext = poly\_sub\_cipher(plaintext, key)**

**print(ciphertext)**

**OUTPUT:**

